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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,109

07/28/2006

Hiroshi Osawa

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06/03/2008

Sughrue Mion
2100 Pennsylvania Avenue NW
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EXAMINER

HARRIS, GARY D

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

06/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/582,109	Applicant(s) OSAWA ET AL.	
	Examiner GARY D. HARRIS	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/3/08.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Examiner acknowledges foreign priority documents received on June 8, 2006 which claims priority to August 16, 2004.

Examiner withdraws 35 USC 112 rejection in view of amendment to claims.

Examiner acknowledges amendment to specification due to inadvertently omitted items and translation error.

Applicant's arguments with respect to claims 1 to 18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1-8, 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. US 6,878,459 in view of Kanbe et al. US 2002/0150796 and further in view of Futamoto et al. US 6,541,125.

As to Claim 1, 2, & 4, Takahashi et al. '459 discloses a non-magnetic base material (35) two metal underlayers of a Cr-Mn alloy (38) and a ferromagnetic metal layer followed by a protective layer(3-4) (Col. 4, Line 44-67). The magnetic recording

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media has an easy axis of magnetization (Col. 9, Line 25-36) but does not disclose an axis of magnetization in the circumferential direction. However, Kanbe et al. US 2002/0150796 discloses a Cr alloy underlayer (Paragraph 20) magnetic recording media with a magnetic anisotropy in the circumferential direction with an orientation ratio from 1.4 to 1.6 with a stabilized write direction (Paragraph 92). It would have been obvious to one skilled in the art to require an axis of magnetization in the circumferential direction in order to obtain good write characteristics as disclosed by Kanbe et al. '796. Both Takahashi et al. '459 and Kanbe '796 disclose the use of Mn in the underlayer. Takahashi et al. '459 discloses the Cr alloy underlayer has a preferred addition of Mn (Col. 4, Line 54-59). Kanbe discloses the addition of Mn in order to optimize flux in the first underlayer (Paragraph 20) but they do not disclose applicants claimed range of atomic percentage. However, Futamoto et al. '125 discloses a Co-Cr-Mn content in the underlayer from 3-25 atomic percent. It would have been obvious to optimize the Takahshi et al. '459 in view of Kanbe et al. '796 with an atomic percentage of the Futamoto et al. '125 invention in order to optimize magnetic flux as taught by Kanbe. Additionally, it would have been obvious as this would be a results effective variable MPEP 2144.05 that would be optimized by one of ordinary skill in the art through routine experimentation.

As to Claim 5 & 6, Takahashi et al. '459 discloses Cr-Mn alloys and Cr-Ti based alloy layers (Col. 4, Line 54-57).

As to Claim 7 & 8, Takahashi et al. '459 discloses using substrate materials of glass and or silicon (Col. 7, Line 52-57) commonly found in the art.

As to Claim 10, Takahashi et al. '459 discloses a cobalt containing ferromagnetic layer with Ta (Col. 16, Line 32-38), Co-Mo .

As to Claim 11, Takahashi et al. '459 discloses a Cr rich non-magnetic layer (Col. 12, Line 50-67).

As to Claim 12, Takahashi et al. '459 discloses a stacked structure utilizing Ru with Cr alloys (Col. 4, Line 54-67).

As to Claim 13, Takahashi et al. '459 discloses the use of Co-Cr-Pt based alloys (Col. 18, Line 41-49).

As to Claim 14, Takahashi et al. '459 impurities used in the Ar gas including O₂ (Col. 14, Line 55-63). Additionally, this would have been a product by process. The patentability of a product is independent of how it was made. Ex parte Jungfer 18 USPQ 1796, 1800 (BPAI 1991); Bristol-Myers Co. v. U.S. International Trade Commission 15 USPQ 2d 1258 (Fed. Cir. 1989). The burden is on applicants to show product differences in product by process claims. In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113.

As to Claim 15, Takahashi et al. '459 discloses a magnetic head used in the reproduction process (Col. 23, 24, Line 65-67, 1-9 respectively).

As to Claim 16, Takahashi et al. '459 discloses Cr alloys with Mn, Ti (Col. 4, Line 54-59).

As to Claim 17, Takahashi et al. '459 discloses a Cr alloy comprising Mo and Mn (Col. 25, Line 50-55).

As to Claim 18, Takahashi et al. '459 discloses underlayers with B (Col. 4, Line 54-59).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. US 6,878,459 in view of Kanbe et al. US 2002/0150796 in view of Futamoto et al. US 6,541,125 and further in view of Fukushima et al. US 6,821,653.

As to Claim 9, Takahashi et al. '459 discloses using texturing aimed at controlling orientation of the magnetic crystal grains (Col. 8, Line 59-67) but does not disclose a

line density. However, Fukushima et al. US 6,821,653 disclose a line density of 7500 lines/mm or more (Col. 2, Line 25-44) in order to enhance read write characteristics.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GARY D. HARRIS whose telephone number is (571)272-6508. The examiner can normally be reached on 8AM - 5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith D. Hendricks can be reached on 571-272-1401. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gary D. Harris/
Examiner, Art Unit 1794

/Holly Rickman/
Primary Examiner, Art Unit 1794